

# Work Order ID 103637

\*103637\*

Page 1

June-24-13 1:59:48 PM

Item ID: D6101-001 Accept \*N9000040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Saddle Billet  
 Start Date: 6/24/13 Start Qty: 40.00 \*40\* Cust Item ID:  
 Required Date: 6/24/13 Req'd Qty: 40.00 \*40\* Customer:  
 Reference:

Approvals: Process Plan: MLJ Date: 13-06-25 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_  
 Run Start \*NR1\*  
 Stop \*NR2\*

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| Draw Nbr                       | Revision Nbr             |                      |         |        |              |               |               |                  |                |
| D6101                          | Rev B                    |                      |         |        |              |               |               |                  |                |

100 0.00  
 \*100\* PURCHASING  
 Purchasing Memo  
 Purchasing Issue P/O: 20348 0.00  
 a) Description: Aluminum billet  
 b) 6.00" x 6.250" x 2.00" thick  
 c) Tolerance on length are +0.030"/-0.000" E+/-0.008"  
 d) Grain direction along 6.00" length  
 e) Material: 7075-T7351 (QQ-A-250/12)  
 f) Material certification required

CL 13/06/26 (40)

110 0.00  
 \*110\* Receive & Inspect for Damage & Mat'l Certs  
 Packaging Memo  
 Packaging Ensure material certification is attached 0.00

13/7/15 (40)

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|  |  |  |  |  |   |  |
|--|--|--|--|--|---|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td style="width: 33%;">           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </td> <td style="width: 33%;">           Crosstube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </td> <td style="width: 33%;">           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </td> <td style="width: 33%;">           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </td> </tr> </table> | Skid-tube <input type="checkbox"/><br>Machining <input type="checkbox"/><br>Thermoforming <input type="checkbox"/><br>Large Fab <input type="checkbox"/> | Crosstube <input type="checkbox"/><br>Small Fab <input type="checkbox"/><br>Finishing <input type="checkbox"/><br>Composite <input type="checkbox"/> | Water Jet <input type="checkbox"/><br>Prod. Eng. Coord. <input type="checkbox"/><br>Rec/Store/Packaging <input type="checkbox"/><br>Supplier <input type="checkbox"/> | Engineering <input type="checkbox"/><br>Quality <input type="checkbox"/><br>Other <input type="checkbox"/> |
| Skid-tube <input type="checkbox"/><br>Machining <input type="checkbox"/><br>Thermoforming <input type="checkbox"/><br>Large Fab <input type="checkbox"/> | Crosstube <input type="checkbox"/><br>Small Fab <input type="checkbox"/><br>Finishing <input type="checkbox"/><br>Composite <input type="checkbox"/>                               | Water Jet <input type="checkbox"/><br>Prod. Eng. Coord. <input type="checkbox"/><br>Rec/Store/Packaging <input type="checkbox"/><br>Supplier <input type="checkbox"/>  | Engineering <input type="checkbox"/><br>Quality <input type="checkbox"/><br>Other <input type="checkbox"/>   |  |   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |   |                   |                    |             |              |              |
| Doc/Data      |      |      |     |   |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |   |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |   |                   |                    |             |              |              |
| Material      |      |      |     |   |                   |                    |             |              |              |
| Operator      |      |      |     |   |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |   |                   |                    |             |              |              |
| Process       |      |      |     |   |                   |                    |             |              |              |
| Supplier      |      |      |     |   |                   |                    |             |              |              |
| Training      |      |      |     |   |                   |                    |             |              |              |
| Transport     |      |      |     |   |                   |                    |             |              |              |
| Unapproved    |      |      |     |   |                   |                    |             |              |              |

### FAULT CATEGORY

|  |  |   |  |
|--|--|---|--|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><br><input type="checkbox"/> Other |
|--|--|---|--|

# Work Order ID 103637

\*103637\*

Page 2

June-24-13 1:59:48 PM

Item ID: D6101-001 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Saddle Billet  
 Start Date: 6/24/13 Start Qty: 40.00 \*40\* Cust Item ID:  
 Required Date: 6/24/13 Req'd Qty: 40.00 \*40\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

| Sequence ID/<br>Work Center ID         | Operation<br>Description  | Set Up/<br>Run Hours | Tool ID                       | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--|---|----------------------|-------------------------------|--------|--------------|---------------|---------------|------------------|----------------|
| 120<br>*120*<br>QC<br>Quality Control  | QC6- Inspect dimensions to drawing<br><br>Memo<br>Ensure Material certification comply to Dwg D | 0.00<br><br>0.00     | CML 13/07/16                  |        |              | 40            | 15            |                  |                |
| 130<br>*130*<br>Packaging<br>Packaging | Identify as per dwg & Stock Location: <del>13/07/16</del><br>42<br>Memo                         | 0.00<br><br>0.00     | CML 13/07/17                  |        |              | 40            | 10            |                  |                |
| 140<br>*140*<br>QC<br>Quality Control  | QC21- Final Inspection - Work Order Release<br><br>Memo   | 0.00<br><br>0.00     | MLJ 13-07-18<br>MF<br>13-7-17 |        |              |               |               |                  |                |

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|  |  |   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
|--|--|---|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>   | Water Jet <input type="checkbox"/>  | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>   | Prod. Eng. Coord. <input type="checkbox"/>  | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>   | Rec/Store/Packaging <input type="checkbox"/>  | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>   | Supplier <input type="checkbox"/>   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |   |                   |                    |             |              |              |
| Doc/Data      |      |      |     |   |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |   |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |   |                   |                    |             |              |              |
| Material      |      |      |     |   |                   |                    |             |              |              |
| Operator      |      |      |     |   |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |   |                   |                    |             |              |              |
| Process       |      |      |     |   |                   |                    |             |              |              |
| Supplier      |      |      |     |   |                   |                    |             |              |              |
| Training      |      |      |     |   |                   |                    |             |              |              |
| Transport     |      |      |     |   |                   |                    |             |              |              |
| Unapproved    |      |      |     |   |                   |                    |             |              |              |

### FAULT CATEGORY

|  |  |   |   |
|--|--|---|---|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced<br><input type="checkbox"/> Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other<br><br>_____<br>_____<br>_____ |
|--|--|---|---|

# Picklist Print

June-24-13 1:59:48 PM

Page 1

Work Order ID: 103637

Parent Item: D6101-001

Parent Item Name: Saddle Billet

Start Date: 6/24/13

Required Date: 6/24/13

Start Qty: 40.00

Required Qty: 40.00

Comments: IPP B: 01.05.04New IssueC

| Component Item ID/<br>Item Name   | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|-----------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| D6101-001P<br>7075-T7351 2X6X6.25 |                        | Purchased     | No          |                     |                  | 110             | Each               | 0.0000         | 1           | 40           |               |                |        |

143/775 (92)

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

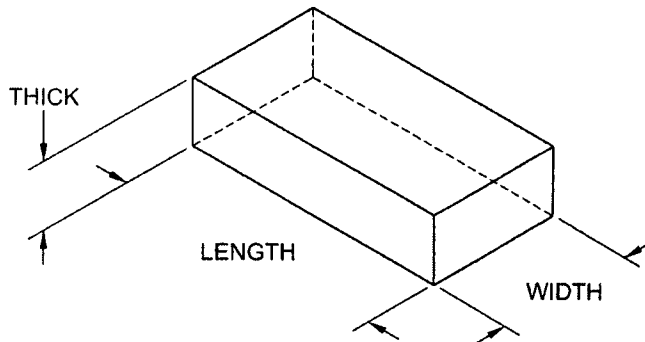
|  |  |   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
|--|--|---|--------------------------------------|------------------------------------|------------------------------------|--------------------------------------|------------------------------------|------------------------------------|--|----------------------------------|--|------------------------------------|--|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table> | Skid-tube <input type="checkbox"/>   | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                           | Crosstube <input type="checkbox"/>   | Water Jet <input type="checkbox"/>  | Engineering <input type="checkbox"/> |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                           | Small Fab <input type="checkbox"/>   | Prod. Eng. Coord. <input type="checkbox"/>  | Quality <input type="checkbox"/>     |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                       | Finishing <input type="checkbox"/>   | Rec/Store/Packaging <input type="checkbox"/>  | Other <input type="checkbox"/>       |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                           | Composite <input type="checkbox"/>   | Supplier <input type="checkbox"/>   |                                      |                                    |                                    |                                      |                                    |                                    |  |                                  |  |                                    |  |                                |                                    |                                    |                                   |  |

| Root Cause    | Date | Step | Qty | Description of work order update or non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Design        |      |      |     |   |                   |                    |             |              |              |
| Doc/Data      |      |      |     |   |                   |                    |             |              |              |
| Equip/Tooling |      |      |     |   |                   |                    |             |              |              |
| Handling/Pre  |      |      |     |   |                   |                    |             |              |              |
| Material      |      |      |     |   |                   |                    |             |              |              |
| Operator      |      |      |     |   |                   |                    |             |              |              |
| Offset/Setup  |      |      |     |   |                   |                    |             |              |              |
| Process       |      |      |     |   |                   |                    |             |              |              |
| Supplier      |      |      |     |   |                   |                    |             |              |              |
| Training      |      |      |     |   |                   |                    |             |              |              |
| Transport     |      |      |     |   |                   |                    |             |              |              |
| Unapproved    |      |      |     |   |                   |                    |             |              |              |

### FAULT CATEGORY

|  |  |   |  |
|--|--|---|--|
| <b>Landing Gear</b><br><input type="checkbox"/> Bending<br><input type="checkbox"/> Centre Not Concentric<br><input type="checkbox"/> Cracks<br><input type="checkbox"/> Crimp/Kink/Ripple/Wave<br><input type="checkbox"/> Cuffs<br><input type="checkbox"/> Crushing<br><input type="checkbox"/> Heat Treat<br><input type="checkbox"/> Inspection Strip in Tube<br><input type="checkbox"/> Marks/Chatter<br><input type="checkbox"/> Turning Sequence<br><input type="checkbox"/> Wave/Twist in Tube | <b>General</b><br><input type="checkbox"/> Bend<br><input type="checkbox"/> BOM/Route<br><input type="checkbox"/> Broken/Damage/Defect<br><input type="checkbox"/> Burrs<br><input type="checkbox"/> Contamination<br><input type="checkbox"/> Countersink<br><input type="checkbox"/> Cut Too Short<br><input type="checkbox"/> Drawing<br><input type="checkbox"/> Drill Holes<br><input type="checkbox"/> Finish<br><input type="checkbox"/> Fit/Function | <input type="checkbox"/> Folio/Program<br><input type="checkbox"/> Grain<br><input type="checkbox"/> Hardware<br><input type="checkbox"/> Inspection Incomplete/Unqualified<br><input type="checkbox"/> Instructions Incomplete/Unclear<br><input type="checkbox"/> Misaligned/off center<br><input type="checkbox"/> Mislabeled<br><input type="checkbox"/> Misread<br><input type="checkbox"/> Off-set<br><input type="checkbox"/> Out of Calibration<br><input type="checkbox"/> Out of Sequence | <input type="checkbox"/> Outside Dimensions<br><input type="checkbox"/> Over/Under tolerance<br><input type="checkbox"/> Part Incorrect<br><input type="checkbox"/> Part Lost/Missing<br><input type="checkbox"/> Part Moved<br><input type="checkbox"/> Positioned Wrong<br><input type="checkbox"/> Power Loss/Surge<br><br><input type="checkbox"/> Pressure/Forced Set-up<br><input type="checkbox"/> Temperature/Cure<br><input type="checkbox"/> Weld<br><input type="checkbox"/> Wrong Stock Pulled<br><input type="checkbox"/> Other |
|--|--|---|--|

# SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

**B** ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

| Part No.  | Alloy                    | Length | Width | Thick | Grain Direction    |
|-----------|--------------------------|--------|-------|-------|--------------------|
| D6101-001 | 7075-T7351 (QQ-A-250/12) | 6.000  | 6.250 | 2.000 | Along 6.000 Length |
| D6101-003 | 7075-T7351 (QQ-A-250/12) | 7.875  | 6.250 | 2.000 | Along 7.875 Length |
| D6101-005 | 7075-T7351 (QQ-A-250/12) | 5.000  | 8.250 | 2.500 | Along 5.000 Length |
| D6101-007 | 7075-T7351 (QQ-A-250/12) | 7.750  | 8.250 | 2.500 | Along 7.750 Length |
| D6101-009 | 7075-T7351 (QQ-A-250/12) | 8.700  | 8.250 | 2.500 | Along 8.700 Length |
| D6101-011 | 7075-T7351 (QQ-A-250/12) | 9.700  | 8.250 | 2.500 | Along 9.700 Length |
| D6101-013 | 7075-T7351 (QQ-A-250/12) | 10.100 | 8.250 | 2.500 | Along 10.10 Length |
| D6101-015 | 7075-T7351 (QQ-A-250/12) | 9.450  | 6.250 | 2.500 | Along 9.450 Length |
| D6101-017 | 7075-T7351 (QQ-A-250/12) | 6.350  | 6.250 | 2.250 | Along 6.350 Length |
|           |                          |        |       |       |                    |
|           |                          |        |       |       |                    |

**RELEASED**  
09/01/15/W

SHEET 1 OF 1  
 REVISIONS  
 ENGINEER  
 UNCONTROLLED COPY  
 SUBJECT TO ANALYSIS  
 WITHOUT NOTICE  
 WORK ORDER  
 NO. 103637 MLS  
 13-06-25

|            |                                     |   |          |
|------------|-------------------------------------|---|----------|
| B          | ADDED D6101-015/-017, ADD ASTM B209 | RF  | 09.04.23 |
| A          | NEW ISSUE                           | CP  | 01.03.30 |
| REV.       | DESCRIPTION                         | BY  | DATE     |
| DESIGN     | CP                                  | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA<br>DRAWING NO. <b>D6101</b><br>TITLE <b>SADDLE BILLET, 7075</b><br>REV. B<br>SHEET 1 OF 1<br>SCALE<br>NTS<br><small>COPYRIGHT © 2001 BY DART AEROSPACE LTD<br/>                 THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small> |          |
| DRAWN      | RF                                  |   |          |
| CHECKED    | <i>[Signature]</i>                  |   |          |
| MFG. APPR. | <i>[Signature]</i>                  |   |          |
| APPROVED   | <i>[Signature]</i>                  |   |          |
| DE APPR.   | <i>[Signature]</i>                  |   |          |
| DATE       | 09.04.23                            |   |          |

**Castle Metals®**

A. M. Castle &amp; Co.

PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

Page 1 of 1

Shipment No:1814445

|  |                         |  |  |   |  |  |  |
|--|-------------------------|--|--|---|--|--|--|
| <b>Ship From:</b><br>A. M. Castle & Co.<br>MONTREAL - CASTLE<br>METALS<br>835-SELKIRK AVENUE<br>POINTE CLAIRE, QUEBEC<br>H9R-3S2 |                         | <b>Sold To:</b><br>DART AEROSPACE LTD<br>1270 ABERDEEN<br>HAWKESBURY, ON K6A 1K7<br>CA |  | <b>Ship To:</b><br>DART AEROSPACE LTD<br>1270 ABERDEEN<br>HAWKESBURY, ON K6A<br>1K7 CAN |  | <b>Deliver To:</b><br>DART AEROSPACE LTD<br>1270 ABERDEEN<br>HAWKESBURY, ON<br>K6A 1K7<br>CA |  |
| <b>Date Shipped</b><br>12-JUL-2013   | <b>F.O.B.</b><br>ORIGIN | <b>Freight Terms</b><br>Prepaid  |  | <b>Carrier</b><br>MANITOULIN  |  | <b>BOL No</b><br>1814445-2   |  |

**Shipment Details****Final Destination Branch - MON**

|                                   |                                   |  |   |                                 |                   |                                 |                                     |
|-----------------------------------|-----------------------------------|--|---|---------------------------------|-------------------|---------------------------------|-------------------------------------|
| <b>Order No</b><br>2928656        | <b>Line No</b><br>1               | <b>Item No</b><br>752237.MO  | <b>Description</b><br>2.0000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000<br>CUT 2SIDED TO 6.25 IN ( + .0310/- .0000 IN (GRAIN TO RUN<br>ALONG 6")) X 6 IN ( + .0310/- .0000 IN (GRAIN TO RUN ALONG 6"))<br>- ALUMINUM PLATE SAW SPECIFICATIONS: QQ-A-250/12 |                                 |                   |                                 |                                     |
| <b>Purchase Order No</b><br>20348 |                                   | <b>Part Number</b><br>YOUR ITEM NUMBER:<br>D6101-001                           |   | <b>Ordered Qty</b><br>40.00 PCS |                   | <b>Invoice Qty</b><br>40.00 PCS |                                     |
| <b>Details</b>                    |                                   | END USER: DART AEROSPACE<br>END USE: COMMERCIAL AIRCRAFT PARTS<br>ECCN # EAR99 |   |                                 |                   |                                 |                                     |
| <b>Delivery No.</b><br>118883162  | <b>Mill</b><br>KAISER<br>ALUMINUM | <b>Heat Number</b><br>637068A8   | <b>Mech Id</b>  | <b>PCS</b><br>40                | <b>Width (IN)</b> | <b>Length (IN)</b>              | <b>Shipped Qty(LBS)</b><br>309.6638 |

These commodities/technologies are subject to US Export Administration &amp; US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle &amp; Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Date:

Name:







Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

# CERTIFIED TEST REPORT

Serial Number  
4299126

Lot: 637068A8 Cast 532 Drop 28 Ingot 2 Melted in USA

(ASTM E8/B557)  
(EN 2002-1)

| Tensile: | Temper | Dir / # Tests    | Ultimate KSI (MPA)         | Yield KSI (MPA)            | Elongation % |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
|          | T7351  | LT / 2 (Min:Max) | 71.2 : 71.8<br>(491 : 495) | 60.7 : 61.2<br>(419 : 422) | 11.5 : 12.7  |

(ASTM E1004)  
(EN 2004-1)

| Conductivity %IACS : | 41.1 Min | 41.1 Max |
|----------------------|----------|----------|
| (MS/M) :             | 23.8 Min | 23.8 Max |

(ASTM E1251)

| Chemistry:  | SI   | FE   | CU  | MN   | MG  | CR   | ZN  | TI   | V    | ZR   | OTHER    |
|-------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Actual(wt%) | 0.09 | 0.21 | 1.6 | 0.05 | 2.4 | 0.19 | 5.7 | 0.03 | 0.02 | 0.02 | TOT 0.06 |

## ALLOY LIMITS

|          | SI   | FE   | CU  | MN   | MG  | CR   | ZN  | TI   | V    | ZR   | OTHER | MAX  |
|----------|------|------|-----|------|-----|------|-----|------|------|------|-------|------|
| 7075     |      |      |     |      |     |      |     |      |      |      |       |      |
| MIN(wt%) | 0.00 | 0.00 | 1.2 | 0.00 | 2.1 | 0.18 | 5.1 | 0.00 | 0.00 | 0.00 | EACH  | 0.05 |
| MAX(wt%) | 0.40 | 0.50 | 2.0 | 0.30 | 2.9 | 0.28 | 6.1 | 0.20 | 0.05 | 0.05 | TOT   | 0.15 |

Aluminum Remainder

## TEST NOTES

Metal represented by this test report was 100% immersion ultrasonically tested from one side with 3mm dead zones top and bottom and meets the Class A and Class B requirements of all specifications referenced on this test report. No surface marking of sonic indications is performed.

*Handwritten:* COK 13/07/16



## CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser) hereby certifies that metal shipped under this order was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content. This material has been inspected, tested and found in conformance with the requirements of the applicable specifications as indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements. All metal which is solution heat treated complies with AMS 2772. Any warranty is limited to that shown on Kaiser's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of Kaiser Aluminum Fabricated Products, LLC laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law. ISO-9001:2000 certified.

*Handwritten signature:* James Hemenway

JAMES HEMENWAY, LABORATORIES SUPERVISOR



## SHIP TO:

A M CASTLE & CO  
14001 ORANGE AVE  
P.O. BOX 1402  
PARAMOUNT, CA 90723

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## SOLD TO:

AM CASTLE & CO- SOLD TO  
1420 KENSINGTON RD  
SUITE 220  
OAK BROOK, IL 60523

## CERTIFIED TEST REPORT

Serial Number  
4299126

|                               |                         |                           |                                     |   |                             |  |
|-------------------------------|-------------------------|---------------------------|-------------------------------------|---|-----------------------------|--|
| CUSTOMER PO NUMBER:<br>222238 |                         | WORK PACKAGE:             | CUSTOMER PART NUMBER:<br>752237     |   | SHIP RUN/LOAD:<br>102647/16 | GOV'T CONTRACT NUMBER:                       |
| KAISER ORDER NO:<br>1152919   | LINE ITEM:<br>1         | SHIP DATE:<br>28-MAY-2013 | ALLOY:<br>7075                      | CLAD:<br>BARE                               | TEMPER:<br>T7351            | PRODUCT DESCRIPTION:<br>Kaiser Select® Plate |
| WEIGHT SHIPPED:<br>2880 LB    | QUANTITY:<br>2 PCS EST. | TRUCK B/L #:<br>2042492   | GAUGE:<br>2.0000 IN<br>(50.8000 MM) | DIAMETER/WIDTH:<br>48.500 IN<br>(1231.9 MM) |                             | LENGTH:<br>144.500 IN<br>(3670.3 MM)         |

MHU 1685838: LOT 637055A5: 1 pieces;  
MHU 1685842: LOT 637068A8: 1 pieces;

## Certified Specifications

AMS 4078/RevJ  
ASTM B 209/Rev10  
BSS 7055/RevA  
DPS 4.713/RevAK  
MMS 159/RevT

AMS-QQ-A-250/12  
ASTM B 594/Rev09  
CMMP 025/RevU  
GAMPS 9101/RevB  
PS 21211/RevL

AMS-STD-2154/RevA  
BAC 5439/RevH  
CSTI 006/RevD  
GSS16100/RevG/Amd1

Test Code: 4297

## Test Results

Lot: 637055A5 Cast 532

Drop 27

Ingot 5

Melted in USA

(ASTM E8/B557)  
(EN 2002-1)

|          |        |                  |                            |                            |              |
|----------|--------|------------------|----------------------------|----------------------------|--------------|
| Tensile: | Temper | Dir / # Tests    | Ultimate KSI (MPA)         | Yield KSI (MPA)            | Elongation % |
|          | T7351  | LT / 2 (Min:Max) | 72.1 : 72.6<br>(497 : 501) | 60.9 : 61.0<br>(420 : 421) | 11.5 : 12.7  |

(ASTM E1004)  
(EN 2004-1)

|                      |          |          |
|----------------------|----------|----------|
| Conductivity %IACS : | 40.5 Min | 40.9 Max |
| (MS/M) :             | 23.5 Min | 23.7 Max |



(ASTM E1251)

|             |      |      |     |      |     |      |     |      |      |      |          |
|-------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Chemistry:  | SI   | FE   | CU  | MN   | MG  | CR   | ZN  | TI   | V    | ZR   | OTHER    |
| Actual(wt%) | 0.08 | 0.20 | 1.5 | 0.06 | 2.5 | 0.20 | 6.0 | 0.03 | 0.02 | 0.02 | TOT 0.05 |

